

Linear Variable Differential Transformer (LVDT) W-DC Series



Product Description

W-DC type displacement sensor is powered by DC voltage. The sensor can work as long as it is connected to an external DC power supply (see dimensions Figure 1 and Table 2).

The DC displacement sensor encapsulates the electronic transmitter and sensing measurement unit in a stainless steel tube and directly outputs a standard voltage or current signal. It adopts the principle of LVDT linear differential transformer (Linear Variable Differential Transformer) and has the characteristics of good environmental adaptability, long service life, high sensitivity and resolution, and can meet the requirements of harsh environments such as high and low temperature, strong dust, moisture, underwater, and oil cylinders. When using it, just put the W-DC displacement sensor, the shell is clamped on the reference object, and the top of the measuring pole (or clamped) is on the measured point, and the corresponding DC power supply voltage is provided, and then directly measure the relative displacement between objects

Technical Data

Measuring Range	0~1-2000mm (one-way), 0~±0.5-1000mm (two-way) (optional within the range)
Output	4~20mA, 0~5V, 0~10V, ±5V
Power Supply Voltage	9v~24VDC
Accuracy	0.5%, 0.3%, 0.2%, 0.1%, 0.05% (optional)
Dynamic Frequency	0~20Hz
Working Temperature	-10°C~+60°C (the working temperature of the sensor part is -25°C, the working temperature of the transmitter part is -10°C)
Start-up Characteristics	no preheating required
Working Hours	can work for a long time
Temperature Drift	less than the value in Table in the full range

Accuracy	0.5%	0.3%	0.2%	0.1%	0.05%
Temperature Drift	0.03%/°C	0.018%/°C	0.014%/°C	0.007%/°C	0.003%/°C

Table1

Displacement Sensor Integrated Size Table:

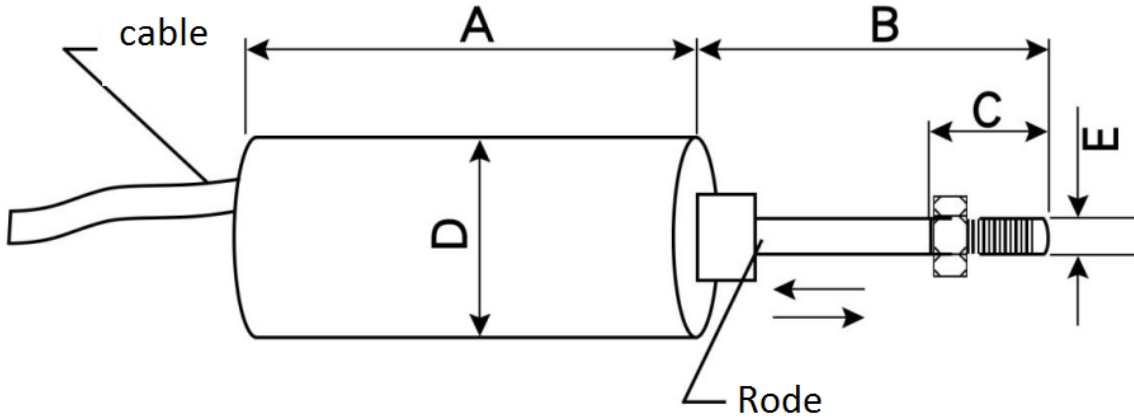
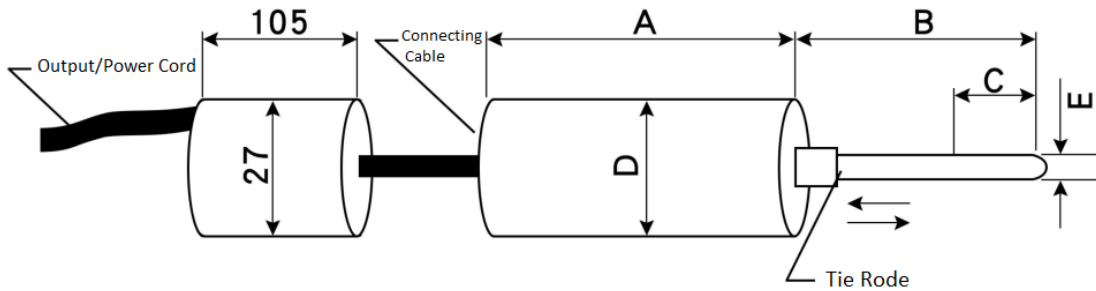


Figure1: Model W-DCD (full scale, i.e. one-way range) W-DCS (zero point in the middle, i.e. two-way range)

Model	Measuring Rang(mm)	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)
W-DCD1、W-DCS0.5	1、±0.5	152	16	15	Φ26	M5
W-DCD5、W-DCS2.5	5、±2.5	152	20	15	Φ26	M5
W-DCD10、W-DCS5	10、±5	178	25	15	Φ26	M5
W-DCD15、W-DCS7.5	15、±7.5	178	30	15	Φ26	M5
W-DCD20、W-DCS10	20、±10	198	35	15	Φ26	M5
W-DCD25、W-DCS12.5	25、±12.5	198	40	15	Φ26	M5
W-DCD30、W-DCS15	30、±15	239	45	15	Φ26	M5
W-DCD50、W-DCS25	50、±25	303	65	15	Φ26	M5
W-DCD100、W-DCS50	100、±50	353	115	15	Φ26	M5
W-DCD150、W-DCS75	150、±75	403	165	15	Φ26	M5
W-DCD200、W-DCS100	200、±100	504	215	15	Φ26	M5
W-DCD300、W-DCS150	300、±150	703	315	15	Φ26	M5
W-DCD400、W-DCS200	400、±200	892	415	15	Φ26	M5
W-DCD500、W-DCS250	500、±250	987	515	15	Φ26	M5
W-DCD600、W-DCS300	600、±300	987	615	15	Φ26	M5
W-DCD700、W-DCS350	700、±350	1029	715	20	Φ26	M5
W-DCD800、W-DCS400	800、±400	1093	815	20	Φ26	M5
W-DCD900、W-DCS450	900、±450	1242	915	20	Φ26	M5
W-DCD1000、W-DCS500	1000、±500	1326	1015	20	Φ26	M5
W-DCD1200、W-DCS600	1200、±600	1530	1215	20	Φ26	M5
W-DCD1500、W-DCS750	1500、±750	1869	1515	20	Φ26	M5
W-DCD2000、W-DCS1000	2000、±1000	2330	2015	20	Φ26	M5

Displacement Sensor Split Size Table:

Models W-DCL (full scale, i.e. one-way range), W-DCD (zero point in the middle, i.e. two-way range) and below are the dimensions of the split sensor part, and the transmitter part dimensions are uniformly 105mm in length and 26mm in diameter



Dimensional drawing of W- DC series split AC displacement sensor

Main: The default length of the connecting line between the sensor and the transmitter is 1.5 meters

Model W-DC	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)
1L-5L 0.5D-2.5D	55		15	Φ 20 (Φ 26)	Φ 5	M5
10L- 15L 5D-7.5D	85		15	Φ 20 (Φ 26)	Φ 5	M5
20L-25L 10D-12.5D	101		15	Φ 20 (Φ 26)	Φ 5	M5
30L 15D	144		15	Φ 20 (Φ 26)	Φ 5	M5
50L 25D	209		15	Φ 20 (Φ 26)	Φ 5	M5
100L 50D	259		15	Φ 20 (Φ 26)	Φ 5	M5
150L 75D	309		15	Φ 20 (Φ 26)	Φ 5	M5
200L 100D	409		15	Φ 20 (Φ 26)	Φ 5	M5
300L 150D	607		15	Φ 26	Φ 5	M5
400L 200D	802		15	Φ 26	Φ 5	M5
600L 500L 300D	891		15	Φ 26	Φ 5	M5
700L 350D	933		15	Φ 26	Φ 5	M5
800L 400D	997		20	Φ 26	Φ 5	M5
900L 450D	1104		20	Φ 26	Φ 5	M5
1000L 500D	1230		20	Φ 26	Φ 5	M5
1200L 600D	1452		20	Φ 26	Φ 5	M5
1500L 750D	1773		20	Φ 26	Φ 5	M5
2000L 1000D	2280		20	Φ 26	Φ 5	M5

Data Sheet for Linear Sensors

Linear Variable Differential Transformer (LVDT)

W-DC Series

Features:

- High measurement accuracy, up to 0.05%;
- Strong signal anti-interference ability;
- Non-contact principle, long service life;
- High protection level, can be customized to be waterproof, explosion-proof, high and low temperature, etc.

Product Model:

W-DC+Range LVDT Displacement Sensor

Code		Signal Output Mode				
S1		4-20MA line system				
S2 S±2		0-10V three-wire system, ±10V				
S2 S±3		0-5V line system, ±5V				
Accuracy Level						
Code		0.5%	0.3%	0.2%	0.1%	0.05%
		A	B	C	D	E
code		sensor style				
T		Thread drag type				
H		Spring Return				
code		Zero position				
L1		Zero position is at the top (push installation)				
L2		Zero position in the middle (bi-directional range)				
L3		Zero position is at the bottom (pull-to-install)				

Note: Regarding the selection of sensors, there are two types: integrated and split. The above parameter selection remains unchanged.



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Precautions:

1. Although the circuit adopts internal power protection measures, the user is still required to check before turning on the power. Do not exceed the rated voltage value to avoid affecting the measurement accuracy and causing unnecessary losses.
2. It is best not to install the sensor close to strong electromagnetic fields. Unless otherwise specified, ensure that the sensor is not used in an environment that is strongly corrosive to metal.
3. The motion trajectory of the measured point is preferably parallel to the axis of the sensor rod. The measurement result is the amount of movement. If the sensor probe moves, the contact surface between the probe and the object to be measured should not be uneven.
4. When installing and using the sensor, handle it with care and avoid knocking and falling. When fixing the sensor, just clamp the housing. Do not use too much force or force, and do not cause the housing to dent or deform, which will affect the measurement accuracy. Pay attention to its measurement range. Do not use it beyond the range to damage the sensor.
5. Please power on the sensor and preheat it for 5 minutes before taking formal measurement.
6. The displacement sensor is a precision instrument and has been calibrated and aged before leaving the factory. Users are not allowed to disassemble it at will, otherwise it will affect the measurement accuracy and may cause damage.

Wiring Instructions:

Red wire: power supply positive,

yellow wire: output positive,

black wire: public ground

Installation and Fixing Fixture Dimensions:



Universal Magnetic



Fixed Fixture

It can be fixed vertically or horizontally, and is suitable for both rebound and threaded displacement sensors. It is suitable for drilling and threading installation. If it is not convenient to drill holes, you can choose magnetic skin fixation